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DEALER EDITION

Electricity on the Farm

June
1929

This Issue	128,000 copies
Regular (Farmer) Edition	122,000
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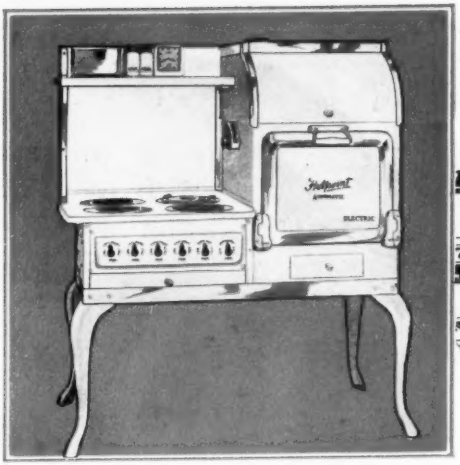

Canning Time is Easier

This Hotpoint Electric Way

FOR instance, in preserving berries, etc. After the berries have been washed and picked over, fill the jars half full. Then add 6 tablespoons of sugar per quart, fill with fruit to the top and add cold water to cover. Adjust the rubber and cap, loosely. Arrange jars one-half inch apart on a shallow pan and place in oven. Set oven temperature to maintain 250° and "process" one hour. Remove from oven, seal the tops and cool before putting jars away.

That's all there is to making the most delicious canned whole fruit you ever tasted. And the kitchen stays cool. In fact, you wouldn't know the heat was on unless you looked at the automatic heat control and thermometer at the side of the oven.

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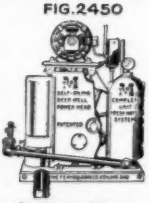
A GENERAL ELECTRIC ORGANIZATION

World's Largest Manufacturer of Electric Ranges and Household Electric Heating Appliances

It's So Easy to "Improve the Picture"!

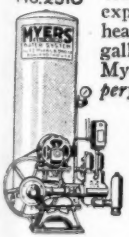
GONE forever is the wearying toil of lugging heavy pails of water—when you modernize your farm with an unfailing supply of fresh running water. And it is so easy to change from former methods to the comfort and convenience of pure, fresh water "always on tap"—in kitchen, bathroom, laundry, barns and feed lots—all of the places where you now have to carry heavy loads for the needs of your family and livestock. Your Myers dealer is ready to tell you how little the change will cost.

FIG.2450



MYERS
Self-Oiling Water Systems

FIG.2510



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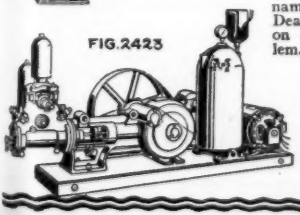
Write us for catalog and name of the nearest Myers Dealer. Ask us for advice on any water service problem.

FIG.2423



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Electricity on the Farm

Vol. 2 JUNE 1929 No. 6

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See them at your electric light company or write for booklet to . . .

MALLEABLE IRON RANGE CO., 400 LAKE ST., BEAVER DAM, WIS.

Monarch
ELECTRIC RANGE

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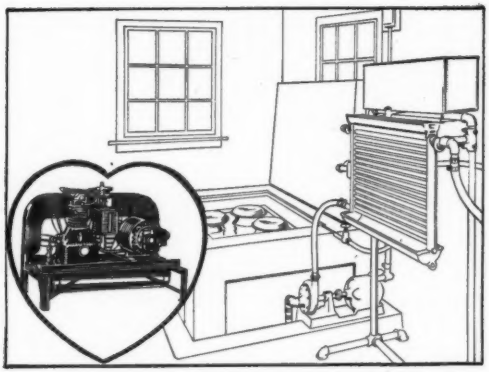

As a further extension of its service to dairymen, Kelvinator announces a complete line of Kelvinator-equipped Milk Coolers (cabinets by Esco), sold and serviced by your neighborhood Kelvinator dealer.

These cabinets, staunchly built of steel and insulated with 3-inch cork on all sides, are made in 4, 6, 8, 10, 12 and 14-can capacities. They are fitted with the dependable Kelvinator electric refrigerating unit which *automatically* maintains a uniformly low temperature *below* 50 degrees.

Low in first cost and in operating cost, Kelvinator-equipped cabinets pay for themselves in the prevention of milk spoilage, rejections, etc. They forever eliminate the cost of uncertainty of harvesting and handling an ice supply.

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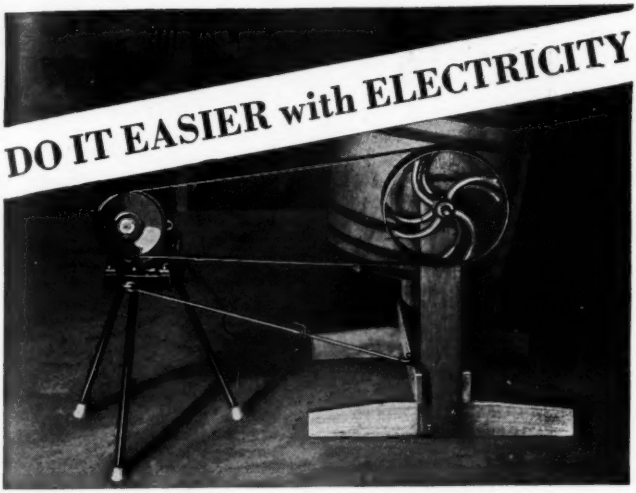
KELVINATOR OF CANADA, LIMITED, LONDON, ONTARIO

Kelvinator-equipped Dry Coolers are available in three convenient sizes for dairymen selling bottled milk. See your nearest Kelvinator dealer or write direct for information on the complete line for every dairy requirement.

THE RELIABLE
KELVINATOR

DO IT EASIER with ELECTRICITY



WHEN electricity does the work, churning becomes a cool and easy task . . . a task that never tires you out.

And there's no power more steady, more economical, and more dependable for churning than the power of a Westinghouse Electric Motor. These motors are built to give years of service with but little attention. And one of them will do an hour's churning for the price of a couple of sticks of gum.

Westinghouse motors and labor-saving appliances make equally light work of grinding, milking, pumping water, sawing, ironing, cleaning, and all such tiresome tasks. They not only save your strength, but do the jobs so quickly you have hours of freedom for other more profitable duties and for recreation.

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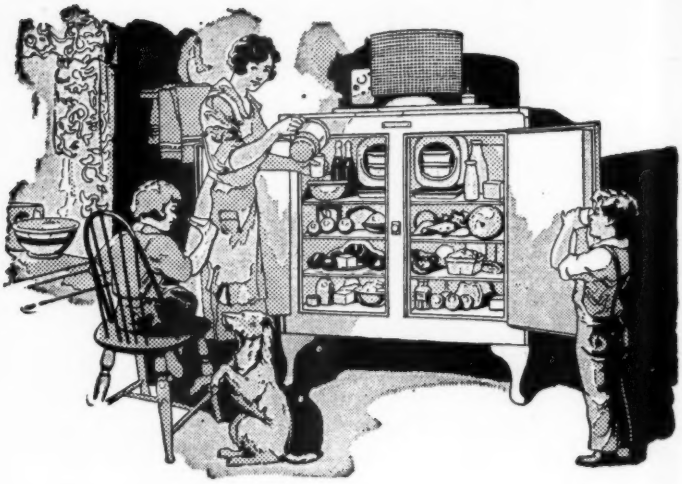
Electric motors, electric ranges, electric home appliances of all kinds . . . when they carry the Westinghouse trade-mark you know they are good for years and years of hard service.

Westinghouse



The Vanishing Ice House

Soon the winter task of cutting ice will be a thing of the past—and with it the unnecessary spoilage of food. For now, electricity fills every refrigeration need on the electrified farm.

The General Electric refrigerator is entirely automatic. It requires no attention, no oiling, and its constant, correct temperature safeguards food and keeps it fresh and wholesome. This is the latest electrical boon, which, with G-E MAZDA lamps, G-E motors, and other General Electric products, releases men and women on the farm from age-old burdens and drudgery.

If you are located on or near an electric power line, ask your power company for complete information concerning the possible uses of electricity on your farm.

Tune in on the General Electric Special Weekly Farm Program over G-E Stations WGY (Schenectady), KOA (Denver), KGO (Oakland). In addition, every Saturday evening at 8 P.M., Eastern Standard Time, the "General Electric Hour" is broadcast over a nation-wide chain.

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GENERAL ELECTRIC

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Electricity on the Farm

Vol. 2 JUNE 1929 No. 6

The Cheap Job Is Often Expensive

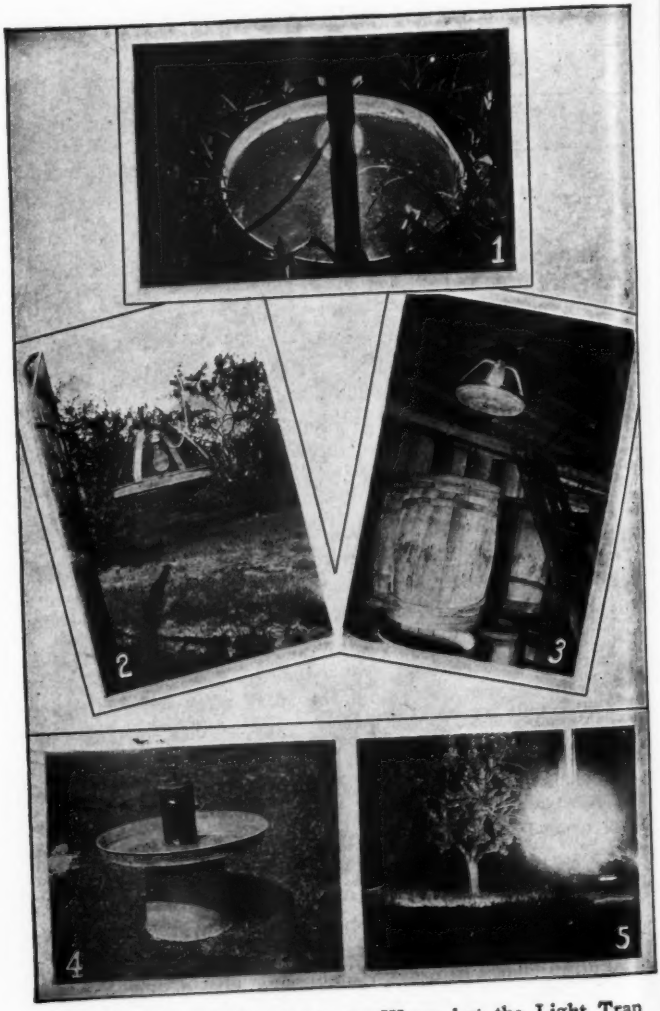
Many farmers have found that, when having wiring done, the lowest priced job proves the most expensive in the long run, largely because the inexperienced electrical contractor is not capable of giving advice on the type of installation that will best serve the customer. The man who does the job cheapest usually figures on the minimum size wire permitted for the minimum number of outlets desired. He makes no allowance for additional convenience outlets, nor is he capable of recommending to his customer where additional outlets should be inserted. All he is interested in doing is giving only what the customer asks for, and as cheaply as possible.

On the other hand, the electrical contractor who is fully qualified, and who has been successful in his work, devotes a great deal of time and thought to new developments and keeps himself posted by following the changes in the field. And back of this, he has full appreciation of the necessity and value of good work.

It is not uncommon to find the small electrical contractor somewhat hazy as to the various types of electrical circuits, such as two phase, three phase, and "three wire" systems. A farmer about to secure three phase service, for example, might have his property wired by one of these inexperienced contractors who would put in a "three wire" system, with the result that before the power company can connect up, the system has to be changed over and expensive alterations made.

In addition to the lack of knowledge, the unskilled contractor is often apt to produce careless work, either through personal indifference or through employing inexperienced workmen. In either case the result is a job which not only fails to meet the needs of the customer, but is actually dangerous from a fire standpoint.

Electrical wiring is one line of work in which it pays to hire experienced workmen. Cheap or amateurish workmanship is expensive in the long run!



The Early Bird May Catch the Worm but the Light Trap Gets the Insects.

1. Insert trap set on ground. Ground light at night; 2. Light trap hung from crossarm on telephone pole; 3. Light trap in apple storage; 4. Vermorel acetylene light trap used in vineyards of France; 5. Through the darkness gleams a light to lure the careless insect.

Light Traps for
Insect Control

By MAURICE W. NIXON

REACTION to light is an important governing factor in insect behavior; some species being active by daylight, and others by night. The occurrence of swarms of insects about street lights, or the retreat of cockroaches and of earthworms before a beam of light are familiar sights.

The tendency of insects to move toward or away from a light is influenced somewhat by the intensity, brilliancy, quality, and position of the light; and by temperature, winds, moisture, and other conditions of environment. Their general life activities are regulated to a great extent by temperature, moisture and wind conditions. These three factors were employed in determining when the adult insects would be in flight and consequently the best conditions for trapping them.

The largest catches were made when the air felt oppressively hot and humid, the thermometer showed only from 60 to 65 degrees Fahrenheit.

Gradually Travel Toward Light

Curiously enough, intense flight continued until bright daylight the next morning during periods when it was noticeably warm throughout the night. In one instance flight began during the night at the time when a generally cold atmosphere seemed to turn quite warm.

Careful observations have indicated that the insect in flight works his way gradually toward the bright light; in due time arriving, tired and ready to alight on something suitable.

The bright reflecting surface of the water and oil appears inviting, whereupon he alights and gets wings and legs entangled and gummed with oil.

The cooperation of electrical engineers, entomologists, and others interested was necessary to make a thorough study of this reaction and develop a means of attracting and catching the insect pests on a large scale.

To attract many insects the ordinary clear glass, type C, lamp has been found entirely satisfactory among the small standard lamps on the market. A 75 or 100-watt lamp is large enough; a more powerful lamp apparently has a repellant effect after the insects approach it.

Oil and Water Trap Best

The most satisfactory trap used consists of a pan to contain water and oil, and with a light directly above. The trap must be strongly built and well balanced, since, due to shallow and broad expanse of water, it tends to tip easily.

These traps may be located at any convenient height from just above the grass up to about six feet. There is nothing to be gained by placing them higher than this.

It is necessary to keep enough water in the pan so that the bottom will not become uncovered to allow the insects to crawl out, dry themselves, and fly away. Also, renew the water from time to time as necessary so it will not become stagnant.

An oil film over the water will serve to "wet" the insects' wings better than water, thus interfering with flight and escape. A white mineral spray oil is very good for this purpose, since it is clear and odorless, therefore not repellant to the pests.

The insects should be removed from the water and destroyed every day during the season of greatest flight in order to prevent their escape. When the water is covered

with floating insects others can walk around on the mat formed without being trapped.

Thirty-four traps were operated in an apple orchard for the particular purpose of studying the possibility of controlling the bud-moth, which were plentiful and doing a great deal of damage.

An average of 42 per trap per night was realized for the season. Thus a catch of 1428 bud-moths a night could be realized from the 34 traps, to say nothing of leaf-rollers and codling-moths which were nearly as plentiful as bud-moths.

Conservative estimates were made of the seasons catch with these 34 traps, and it is safe to say that there were 60,000 bud-moths, 40,000 leaf-rollers, to say nothing of codling-moth which appeared in a close third place. Fourth place was taken by cutworms, of which only a few hundred were captured. Many of these came from nearby gardens. Being in a distinctly apple orchard region these three orchard pests made up the greater percentage of the entire catch.

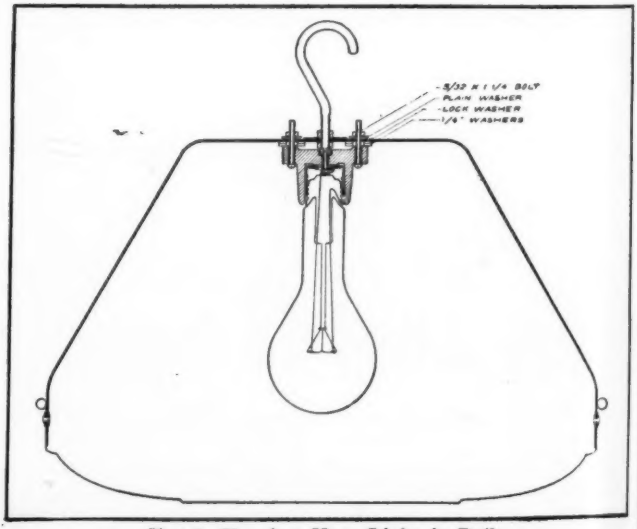
Many individual bud-moths, taken as representative samples throughout the season indicated that approximately forty per cent of the total were females. This forty per cent consisted of virgins, and moths in which eggs were undeveloped. These were caught in about equal numbers. Few spent moths were caught. Evidently females full of maturing eggs are not readily attracted to the traps. Perhaps they do not fly much, or, possibly the moths are caught before the eggs are developed. This is not easily determined.

It is interesting to note that people living across the highway from some of these lights were not bothered with moths this summer, due, no doubt, to the fact they were attracted just across the road.

In another locality, comprising orchards with gardens nearby, during the period from June 13 to September 8, twenty-four traps were operated forty nights, catching an average of 1,680 insects per night, or nearly 67,000 for the season.

Careful identification and classification of all these insects indi-

(*Continued on page 36*)



Sketch Showing How Light is Built.

Working Out a Water System

By E. R. MEACHAM

IF Joe Matthews were monarch of all he surveys, his would be no mean domain. His farm up on Eagle Heights overlooks the beautiful expanse of Lake Mendota on one side and many miles of fertile Wisconsin farms on the other. And at night he sees against the dark skyline the floodlighted dome of the state capitol gleaming like a fairy palace. Down the hill from his farthest fence is Blackhawk's Cave where local tradition says that valiant Indian warrior took refuge during his retreat from the campaign in which Abraham Lincoln had a part.

But a farm's a farm no matter what beauty and history lend glamor to its setting. And every farmer has somewhat the same problems if he would give his family the comfort and convenience of modern living conditions. Mr. Matthews early decided that water under pressure at the faucets in his kitchen and barns would do more for comfortable living than all the rippling blue of Mendota.

Windmill and Gas Engine First Used

For his first water system he used an old fashioned force pump having an ordinary windmill head. The power was supplied by the windmill, but there was also an open, spur-geared pumpjack and a gas engine for calm days.

The well is about 35 feet from the house. The water was pumped to a 350 gallon hydro-pneumatic pressure tank in the basement, but this tank supplied water to the house only; there was no connection between it and the barns. At a point below the frost line, the pump had a valve that could be turned one way to force the water through an underground pipe into this pressure tank—and another way to bring it to the top of the ground where it discharged into a large open concrete tank near the windmill.

Because it was on a higher spot than the barns, the ground sloped away from it in every direction—this tank served as a reservoir from which the water flowed by gravity through underground pipes to a small stock tank in the barn and to two outdoor tanks in the fields. Each of these was set in a partition fence so as to be accessible from two pastures. Since these outdoor tanks were not used in the winter, they were filled by means of valves at the open concrete reservoir near the pump, and the pipes were so laid that they would drain when the valves were closed. But the tank in the barn was most useful in the winter and the pipe supplying it was buried below the frost line. For convenience the valve controlling this supply was at the tank in the barn.

Though the pipe was well buried, and the tank and valve were safe in the barn, there was a weak point in this system. That was the concrete tank out there in the open. It had to be heated all winter long to keep the water flowing.

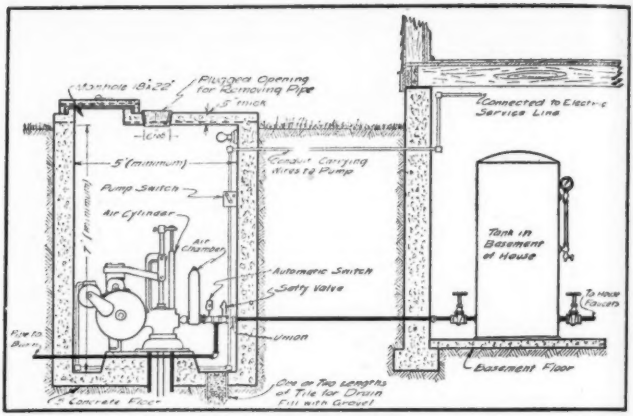
A Change is Made

After years of use the air pump supplying air to the hydro-pneumatic tank had ceased to operate, and the tank became water-logged. As Mr. Matthews expressed it.

"We couldn't get near as much water in the tank as we used to."

That was the way it seemed, of course. But that was not really true. The tank was so nearly full all the time that only a little could be added, and the remaining air could only force a little water out of the faucets.

And the system had other limitations. The windmill and gas engine were rather uncertain sourc-



This Inexpensive and Simple Water System Requires Practically No Attention and is Frost Proof.

es of power, and the continual stocking of the tank heater throughout the long winter took a lot of time.

Then came the electric line. Mr. Matthews was eager for the convenience of electric power and decided to fix up his old pumping outfits. The local implement dealer got out his catalogues and recommended a new pump jack with a gear ratio suitable for electric motor drive. The only make he knew about was big and clumsy, with exposed gears and dependent on a few shallow oil holes and grease cups for lubrication. He knew something about Mr. Matthews' well and the old gas engine which had pumped from it, so to be sure he had plenty of power, he recommended a 2 H.P. motor. The price quoted was $200.00.

Naturally this looked big to Mr. Matthews. So he decided to think it over a while.

A few days later his son brought his instructor in agriculture at the high school home with him to look over his farm project.

The man stopped to chat awhile with Mr. Matthews himself.

"Now that you've got electric power can't we fix up a completely automatic pumping system?" he asked.

"Yes. I've been figuring on putting a 2 H.P. motor on that pump."

"Why get such a big one?"

"The dealer said I'd need it. That's a mighty deep well."

"Of course the hole may be drilled pretty deep, but how far is it to the water? That's the important thing," said the teacher.

"Oh, it's only about 80 ft. to the water."

"You haven't more than 30 head of live stock all together, have you? You really do not need more than 300 gallons an hour. A ¾ H. P. motor is plenty big enough to lift that much water 80 ft., and put a lot of pressure behind it, too. Now, for that outdoor location, you had better choose an entirely enclosed jack, driven by gears or chain. If this is going to be an automatic job, you want it to be off your mind altogether. It should be fully lubricated by a supply of oil in the housing so you won't have to go out there and screw down half a dozen grease cups every day. Besides if you use a belt driven outfit, you will have to build some kind of a shelter over it. A good automatic outfit without the tank will cost around $150.00."

"That sounds good to me," said Mr. Matthews. "But the thing

that would save the most work would be an electric heater of some kind to keep that big tank at the well from freezing solid."

"In Heaven's name why?" shouted the teacher. "You don't use that tank in the winter, do you?"

"Sure do. How else would we get water to the barn?"

Then he explained that by the old system he must pump into this tank exposed on top of the ground before the water could get into the deep laid pipe that carried it to the barn.

Then the agriculture instructor, always eager to be of service to the farmers of his district got busy in real earnest. Together they planned and put in such improvements to the old system as made the new installation a model.

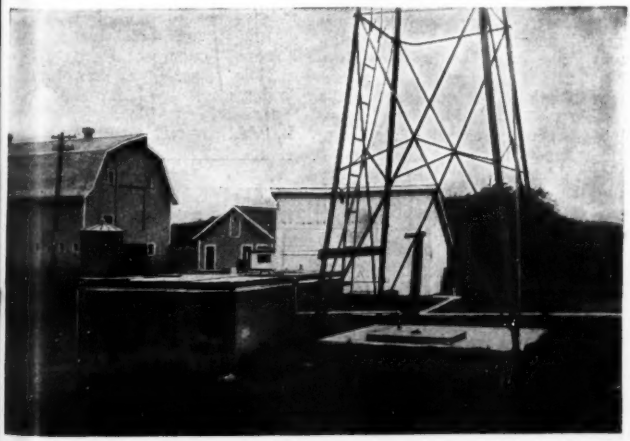
Enlarged the Pit

First they enlarged the pit or dry well around the old pump so that when walled and floored with concrete, it was fully 5 ft. square and 7 ft. deep. The metal casing that lined the drill hole, extended several inches above the floor. So around the casing and flush with its top they poured a solid concrete foundation for the new electric pump jack. And in one corner of the pit, they provided a vertical drain by sinking two or three lengths of tile and filling them with coarse gravel. This carries off any water that may collect in the pit.

New Pumping Unit Installed

Down in this pit, where it never freezes, they installed a brand new pumping unit. It consists of a totally enclosed gear driven jack with the motor built right into it and closely coupled to a short and sturdy pumping head not at all like the common windmill pump. They chose a brass cylinder 2¼" in diameter and equipped with bronze-spring valves which act more quickly and positively than ordinary valves. While they were about it they put in new drop pipe and because it practically floats in the pipe and is easier and quieter to operate, they decided on a wooden pump rod.

This outfit is connected so that it takes the place of the old pump in forcing water directly into the 350 gallon pressure tank in the house cellar. It includes an air pump that keeps enough air in the



All That Appears of Mr. Matthew's Water System. The Tank Formerly Supplied the Farm by Gravity. It is no Longer Used in Winter.

tank to provide good pressure and capacity.

Then to provide for the barn, they dug down to the old supply pipe, cut it off, and reconnected it to a T in the line from the pump to the house.

At first Mr. Matthews had some trouble with this pipe to the barn. If he opened the faucet while the horses were drinking, a mixture of air and water would rush out with such a hiss and sputter that it scared the horses so they would not drink. He found that where the barn pipe left the T in the well pit, it sloped up for a short distance, allowing some of the air meant for the pressure tank to be carried through to the barn with the water. By turning the opening of the T downward, he overcame this annoyance.

When the electrician came to connect the motor he started to string the wires from the corner of the house to the windmill and from there down into the pit.

"I don't know how long I'll let that tower stand," objected Mr. Matthews. "Can't you run the wires underground?"

"Sure," agreed the electrician. "It would make a neater job, too."

So they used lead sheathed cable in galvanized conduit and buried it several inches. In this case the water pipe was already buried below frost, but where a complete new installation is made, it is advisable to lay a line of small sewer pipe with cemented joints from the basement to the well pit to provide a duct for both the water pipe and the electric wires. In case of any trouble, they can be removed and replaced without any digging.

"Now, all I've got to do is to get some planks and make a new cover for the pit," said Mr. Matthews.

"Gee, Dad, let's not have any more wooden covers. I darn near fell through the old one and I skinned my shin something fierce," grumbled his son. "Besides it ain't sanitary. You know the geese sit around on the well platform all the time."

So they braced up a plank form and poured a single tight slab of well reinforced concrete, completely covering the pit. For getting into the pit they provided a manhole and they put a little raised curb around it so water cannot flow in. They were careful to locate this manhole at one side of the pit so a man can easily climb up and down along the wall, and to make it big enough to let the motor and jack pass through. But just before it was too late, someone made an awful discovery.

"What if we should want to lift that drop-pipe? How will we ever get it out? We can't bring it through this manhole for it is not over the well."

But the manhole was where it belonged, so they made another small hole for the pipe and put a tight fitting plug in it.

The complete job is a credit to all who helped with it. Even the implement dealer is so pleased that he forgets his 2 H.P. motor recommendation and claims much of the credit.

"I know a lot of fellows that ought to have automatic systems like this," says he.

Helps Inside and Out

We use electricity for pumping, milking, washing clothes, ironing, cleaning rugs and bedding, lights all over indoors and out; also an electric brooder. Hope some time to have a refrigerator and stove. Yours for more electricity. MRS. L. M. SOREM, Northfield, Minn.

ELECTRICITY IS A FINE THING ON THE FARM. ONE CENT'S WORTH OF IT WILL DO A LOT OF WORK
IT WILL PULL TEN COWS, GROOM TWO HORSES, OR CHURN 33 POUNDS OF BUTTER
YEAH— BUT HOW MUCH ELECTRICITY DOES IT TAKE TO SHOCK WHEAT?

Courtesy *Wichita Eagle.*

Electric Fans for Ventilation

By JOHN M. LARSON
University of Minnesota

IN the earlier days of farm building construction, little thought was given to ventilation. In a large number of the barns that were built by our early settlers there wasn't much need of providing any means for ventilation as they were usually built of native material which was not easily handled to give tight walls. Even today a vast number of farm buildings are so poorly constructed that they need very little artificial ventilation, but such buildings are usually too cold for comfort in sub-zero weather and result in poor producing animals.

As time has gone on new ideas concerning the comfort of livestock have come up and as a result the gravity systems of ventilation have been developed to a high state of satisfaction to provide more livable quarters.

Purpose of Ventilating System

Before going any further it might be well to consider what should be accomplished by a ventilation system. At one time it was thought that it was necessary to have a certain number of changes of air in a building in order to provide an ample amount of oxygen. It was thought that the carbon dioxide in the air had a poisonius effect on the animals. Recent discoveries have shown that poor ventilation is practically harmless as far as the effect on the blood and lungs is concerned.

The real causes for the distress that comes as a result of improper ventilation are:

1. High temperature.
2. Moisture.
3. Lack of air movement.

All three of these must be overcome before one can be sure of real comfort for the animals. The first one is the most easily remedied but not always to the best advantage. Reason number two is the most important one and the greater part of this article will be devoted to it. Air movement is also very important but it is usually taken care of if the moisture is properly taken care of. The same is true of excessive heat. If there is a high temperature there should be very little trouble in ventilating the building as moisture can be much more easily removed if there is a difference between the inside and outside temperatures.

Before successful ventilation of any kind can be had, it is absolutely necessary to have a barn so constructed that four or five changes of air can be made without cooling the barn below the minimum comfort temperature.

How Moisture is Removed

The way moisture is removed from a barn is by bringing in cold air and heating it in the barn, and as it is heated it picks up moisture. By drawing this warm air which is capable of holding more moisture than the cold air that is brought in, the air in the barn is dried. In the gravity systems changing of the air is accomplished by flues which extend upward from the stable through the hay loft and serve to take out the warm air. Intakes are provided to furnish the fresh air.

Wherever electric service is available a different type of ventilating system can be used. In this sytem exhaust fans discharge the warm air from the barn.

Since air movement and the removal of moisture are the real objects in the use of a ventilating system it was thought that this could more easily be accomplished by putting fans into discharge flues similar to those in the gravity systems. In the first systems, fans were installed at the outside walls and air ducts were run to the center of the barn with dampers to shut them off whenever they were not in use. A few systems of this

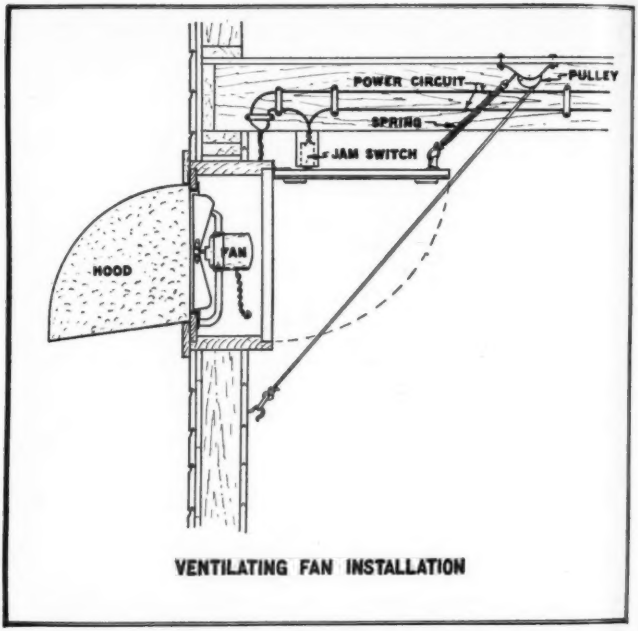


Fig. 1. Diagram Showing How Fan is Installed.

type were observed and the same difficulties were found with all of them. The fans would not last a great length of time until the motor windings would burn out completely or the bearings would burn out. The failure of the fans was attributed to one or more of the following reasons. (1) The fans were too small to permit the use of a large or rugged enough motor to stand up. (2) When the fans were shut off, even though the dampers in the ducts were closed, there was enough leakage of air out to the fan to cause it to frost over and stick. (3) The fan in such an enclosed duct is not easily reached to oil it or clear it of frost and dirt. (4) Wind pressures from outside would overload the motors. (5) Fans would sometimes be turned on without opening the damper in the ducts. (6) Ducts would be too long or so small in diameter as to cause an excessive friction and thus check the flow of air.

With all these reasons for the failure of our systems in mind, we set out to design a system that would eliminate these difficulties as far as possible. We made it ductless and as easily taken care of as possible and simple to operate. As a result the fans were installed in the wall near the ceiling in a manner shown in Figure 1.

Fans at least 18 inches in diameter were used with a large enough motor to stand constant use. Enclosed, ventilated motors are very desirable. The door that covers the inside of the fan housing is made of one inch boards and covered on the inside with one half inch of Insulite to keep it from getting wet and swelling. This door fits very tight to prevent any leakage of warm air to the fan to

frost it over and make it stick. The edge of the door is covered with galvanized iron to keep the edges from splitting off if the door is hard to open. No ducts are used which does away with the friction that the fan would have to overcome. It will be noted that there is a jam switch on the ceiling that is turned on by the door pushing against it, which closes it and keeps it closed until the door is let down. This does away with any possibility of the fan being turned on while the door is still closed and burning out the motor in this way. The fan is in a convenient place for cleaning it and oiling the motor which must be done at frequent intervals.

A hood was placed over the outside to protect the fan against rain, snow and to eliminate the back pressure set up by the wind velocity. The opening of this hood was covered with a ½" screen to prevent birds from nesting in the housing. Figure 2 shows one of these hoods in place.

The one outstanding feature of this type of installation is its simplicity. It is easy to operate as there is nothing complicated about it whatever. It is easy to keep in order as the fan is so conveniently reached. Each time it is turned on, by opening the door, the operator can see whether or not the fan starts and if for any reason it doesn't, it can easily be taken care of.

Performance of Ventilators

Two barns with this type of installations have been closely observed and have been found to be ventilated very well. They have kept the barns dry where before they were installed the walls, ceiling and even floors were very wet most of the time. In extremely cold weather when there is a danger of making the barn too cold by running the fans all night, there would be a little moisture accumulated on the walls in the morning but after the fans had been run for an hour or so the walls would dry off.

It has been thought by some that one large fan in a barn is all that is necessary. This would be true if it was just a question of moving a certain amount of air per hour. A certain number of changes are necessary, but they must be changes of all the air in all parts of the barn and as uniformly as possible. This can best be done by having two or more fans in the

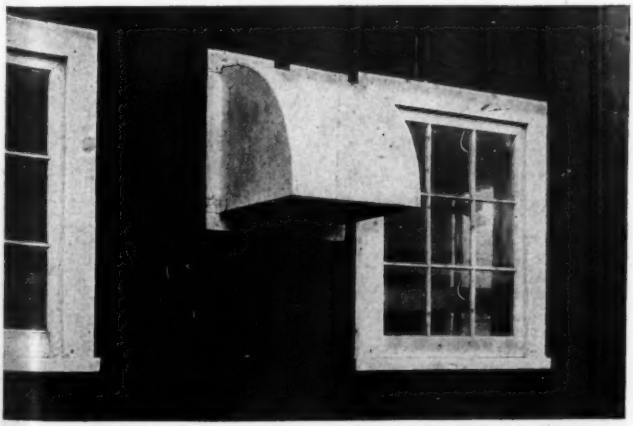


Fig. 2. An Exterior View of a Fan Installation Showing the Hood in Place.

building as evenly distributed as possible. It is customary to use the fan or fans that are located on the side away from the direction from which the wind is blowing. There is usually a slight movement of the air in the direction of the wind inside the barn due to infiltration around doors and windows. In the case of a basement or hillside barn, it is well to put one fan in each end of the barn and one or more on the open side of the barn. If there are calf pens near a corner of a barn, it is well to put a fan over these pens as it is usually colder in such corners and there is a good deal of wet bedding on the floor. A fan over these pens will draw the warmer air from that part of the barn where the larger animals are and in this way keep the portion where the calf pens are, warmer and drier.

The question of intakes must be considered in any installation. In the barns that we used in our tests we did not provide any definite intakes but depended upon leakage of windows and doors and other places where air might enter. We were careful to close up all of the openings as nearly as possible. The hay chutes were closed tight and covered with hay. We found that there were no drafts in any place in the barn by this method and no objectionable frost accumulations around the doors.

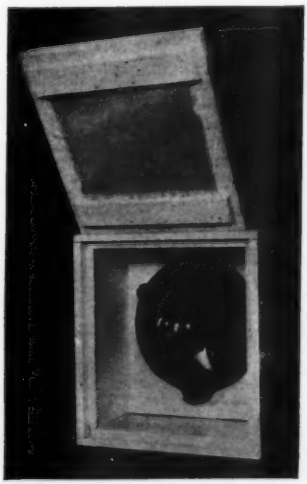


Fig. 3. Fan Ready for Installing. Motor easily Accessible for Oiling, Repairing or Cleaning.

Intakes Sometimes Needed

In some buildings, however, where the walls are of masonry and double doors and windows are used, it may become necessary to supply intakes. If that is the case these intakes should be located where there is less apt to be other infiltration and where they will not short circuit to the fans or create drafts. They should be small and well distributed throughout the barn and should, preferably, be located near the ceiling.

A word might well be said concerning the cost of this kind of a system. It is not yet possible to purchase complete outfits as were mentioned above but it is expected that such an outfit will soon be available. The installations we used cost them about $90.00 per fan installed. This, of course, varies with the sizes of fans used.

Do not invest in cheap fans or fans that are too small. Eighteen inch fans are about the smallest that should be used. If they deliver too much air, secure slower speed fans rather than smaller ones. No fan should be used that has a speed of over 1200 r. p. m. as speeds higher than that are objectionable due to their hum. Use only the best grade of switches and have a substantial job of wiring done.

The cost of operation is naturally one item to be considered. In the dairy barn at the experiment station at Morris, Minnesota, two fans were operated from November 9th, 1928 until March 24th, 1929 and consumed 315 K. W. H. of energy. At 3 cents per K. W. H. this means a cost of $9.45 for four and a half months. This represents the greatest part of a winter's operation. During the last two weeks, from March 10 to 24, the fans ran continuously night and

(*Continued on page 37*)

Sharpening the Sickle with the

Power Grinder

By L. M. ROEHL,
New York State College of Agriculture.

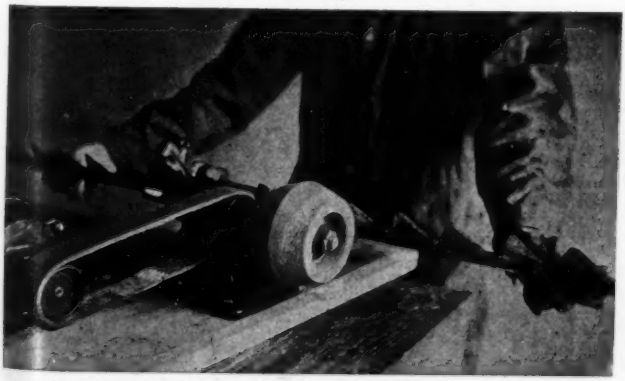
THERE are on the market at the present time power sickle tool and disc grinders. The cost is less than a dollar more than the hand grinders which are made for the same work. Attachments are made for holding the sickle and they are a part of the outfits when purchased. In practice, the tool holder may be used or not as desired by the workman. Sickle grinding is as easily done by holding by hand.

As may be seen in the cut, the plain grinding wheel is removed so as to be out of the way while the sickle is being ground.

In holding the sickle to the grinder the right side of one section and the left side of the one next to it are ground at the same time. Sparks from the grinder will show where the grinding is taking place and the worker can thus determine if he is grinding evenly. The sickle is held on lightly and moved up and down on the grinder. This produces even grinding and prevents the section from heating excessively. If a long sickle is to be ground it is desirable to place a box, sawhorse or other support for the end of the sickle to rest on, thus easing the work. It also results in better work.

The time saved in using a motor driven grinder in place of a grindstone or hand power emery grinder will pay for the outfit many times over in the course of a few years. Tests have revealed that one man with a motor driven sickle grinder will grind a sickle in less than one-fourth of the time that two men will do it with a grindstone.

A quarter horsepower motor as shown in the cut has been found satisfactory for the sickle grinding as well as for all other farm grinding work. It should be equipped with a pulley that will give a speed of from 2000 to 2500 R.P.M. to the grinder.



Sharpening the Sickle is a Short and Easy Task Where the Motor Driven Grinder is Used.

GRAN' PA'S DAY DREAMS

By Mrs. Elmer Lewis

MY grandpa's most a hundred
And he likes to sit and dream
Of the days when he was younger
And the changes he has seen.
Oh, the changes in a century
Have been many, have been great
And we like to hear the stories,
That my grandpa can relate.

He just delights in telling
How they used to cut the grain
With the cradle and the sickle
While the sweat ran down like rain.
How an ox team was his tractor
And his thresher was a flayle.
Then the tread-power and the sweep-stake
And the engine in their trail.

There were paring-bees and huskings
By the torchlight and the moon
Spelling schools and sugar parties
Where the tallow candle shown.
There were sometimes Indian visitors
With their beads and feathers gay;
And the winter when a "Grizzley"
Carried grandpa's pigs away.

Yes, we love our dear old grandpa
And his stories like to hear
For they show how times are changing
And improving year by year.
With our up-to-date machinery
We can cut and thresh the grain
In the field and whirl to market
'Ere there comes a drop of rain.

We prepare our soil with tractors
Milk with 'lectrified machines
Speed away in automobiles
When we want a change of scene.
Electric radio gives us music,
News and "markets" every day
For we've learned to use the current
In our work and in our play.

Grandpa dreams and tells his stories
Of the wonderous olden time.
But we hear him softly chuckle
When he hears of something fine
Which the present day affords us
And he says, "My Boys, 'tis grand
To be living in a century
When electricity is at hand."

Electrical Housekeeping

Conducted by GAIL MEREDITH

If I Were a Bride

"Then they were married and lived happy ever after."

FAIRY tales end like that as a matter of course. But by the time we've outgrown our doll things and our first beaux, we begin to realize that life doesn't always.

Folks are folks, married or single. The marriage service has no magic to change the little every day things that make them happy and comfortable or cross and ill at ease, not very much.

Cleanliness, order and regular, nourishing meals are helpful adjuncts to happiness. That is why so much of the family content depends on the careful planning of the bride.

I suppose every age has thought marriage a complicated job. Certainly not the least of its problems today is the eternal task of keeping house. It is by no means the most important part of marriage, but the way it has of rising up and enveloping us, demanding time and strength, sometimes makes us think it is.

Girls used to step into their new homes skilled in every art of housewifery at the very start. But those long days of intimate companionship with their mothers have passed. Besides the whole business of housekeeping is undergoing such a revolution that the mothers themselves are turned learners, too.

If I were a bride this June, I would study my job as definitely as I studied math, or history, or any of the things they taught in schools.

I would read women's magazines to see how other women had solved their problems of cleaning, or cooking, or management, all of the solely material things that are common to every household.

I'd go to cooking schools. Manufacturers of stoves and refrigerators, of food products of all kinds, have periodical cooking schools where demonstrators are ready to teach all of us to put together meals warranted to make a man's mouth water.

We used to think that tall, fluffy angel foods, feather light cakes and crusty bread came only from the hands of a born cook. But no one believes in luck in cooking nowadays. A reliable recipe, good materials, accurate measurements, exact following of directions, measured time and temperature for cooking, these are the makings of luck.

I'd learn to keep my house clean and attractive with the least possible effort to myself, and all the dependence on machinery that I could afford.

I'd keep on top of my job,—with eyes for the stars and the new crescent moon, and an ear cocked toward all the fascinating things the world is doing. I'd make it my business to 'live happy ever after' if I were a bride.

Salads On Ice

ALONG about the time the corn starts to grow this family begins to dine quite frequently on "one dish salads." I plan them so they are meat, potatoes and vege-

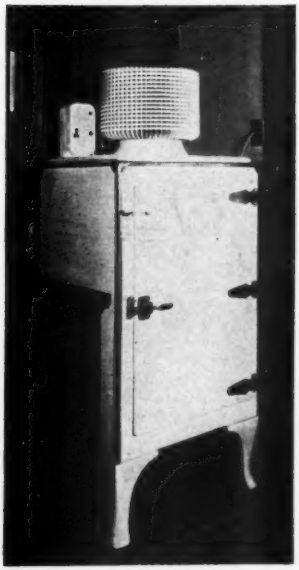
tables all in one and served cold, very cold, let me say.

A clever cook taught me years ago that a good salad is little short of a work of genius. It demands an artist's eye to make it attractive —as well as skill and imagination in food combinations. And it takes a good manager to get it to the table crisp and cold to tickle summer palates.

The chief crimes committeed in the name of salads are concocting them all of a color, and that, dull, and serving them wilted or droopy.

You can get around the latter by picking your lettuce and putting the salad together the last minute or by keeping the materials fresh and cold in a refrigerator.

I have learned to manage my lettuce so it is always crisp. I wash it thoroughly and shake off some of the water. Then I put it in a tightly covered dish and set it in the refrigerator. It keeps crisp and fresh for days at a time. Sometimes I treat my radishes the same way. Since they shrivel easily, I put a little water into their tight jar, too.



It is Easy to Keep Them Crisp and Fresh in a Refrigerator.

One of the things I prize about my electric refrigerator is the help it gives me in getting my meals ahead of time. I often get salads ready for supper in the morning.

I can peel and stuff my tomatoes and pack them into a big tightly covered glass dish. Then I can take them out and put them onto a lettuce leaf at the very last minute. Sometimes I make a potato salad in the morning and pack it away in this same dish, ready to serve.

A whole meal salad has to include more than the salad that is part of the dinner. It must contain in itself all of the important food elements. It must be rich without too much cost. It must be a good, chewy affair, it must have a distinct flavor, and it must be attractive, for the very looks of it must make a man hungry.

A new favorite at our house is made with spaghetti.

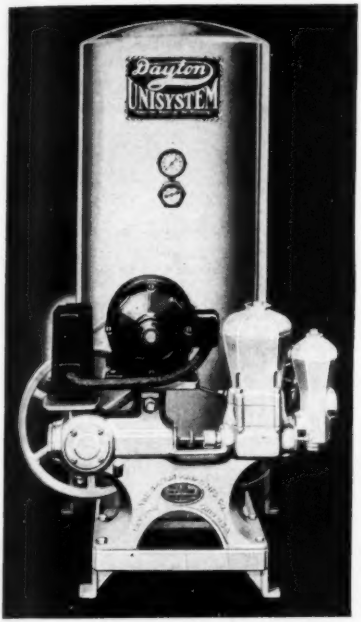
One cup spaghetti measured before it is cooked.
Two cups American cheese diced.
Four slices pineapple diced.
Two cups celery.
One teaspoon onion chopped.
Two pimentos.
Salt to taste.
One-half cup mayonnaise.

Being About the Weather

MARK TWAIN said, "There's always been a lot of talk about the weather, but nobody's ever done anything about it."

If he had lived just a little longer, he would have seen electricity attack the domination of the weather over human comfort. Anyone who minds the summer heat, for instance, will agree that a portable electric fan does quite a lot "about it."

I was sitting with a group of half a dozen women on Martha McCumber's shady side porch the first hot afternoon this summer. A little breeze that had been rust-



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Here is a product of pump specialists—makers of the famous DAYTON "CUB" and many other dependable water systems. The DAYTON UNISYSTEM will furnish running water for your kitchen sink—for your bathroom—for watering stock. Never a pail-ful to pump or carry. You simply turn a faucet. The UNISYSTEM starts and stops itself—is quiet, self-oiling. The pressure tank furnishes water for ordinary purposes, but cold fresh water for drinking can be drawn direct from the well.

Every DAYTON system is thoroughly dependable, rugged and economical. No matter what your requirements are, there is a DAYTON system that will exactly suit—for in addition to the popular CUB and the UNISYSTEM there are many other models of various capacities for deep or shallow wells. Write for complete descriptions and prices.

Pioneer Manufacturers of Private Water Systems

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Dayton WATER Systems

The Dayton Pump & Mfg. Co. Dayton, Ohio

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Please send me complete information and prices on Dayton Water Systems.

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.....

MAKE THE *WATER* DO THE RUNNING

ling the leaves in the elm near by, and flicking at the romper pattern young Mrs. Ray was spreading out on the floor had died away completely. Most of us had given up all pretense of working. Even a discussion of the minister's new wife lagged.

"I suppose it's awful good for the corn," said Amy Brooks dolefully. Amy stopped being weighed along about 200, and she notices the heat more than some.

Before any of us got around to answer her, Mrs. McCumber came out of the house with a big electric fan in her arms. She plugged the cord into a convenient outlet just inside the living room and pushed the button. Instantly a brisk little breeze began to sweep across our faces.

Everyone brightened visibly.

"Them's nice things," said old Auntie Brown appreciatively. "I'm not forgetting how Marthy brought that fan over last September when Jamie had the measles. Durin' the hot spell, we used to cool him off and get him to sleep with no trouble at all. I mind well enough there were summers when I was a girl that it seemed we didn't have a breath of air upstairs weeks on end. But this generation doesn't sit around waitin' for no wind. They turn it on, a "gale or a capful" from a button on the wall."

We smiled at her enthusiasm.

"They are a big help in keeping a sick child comfortable," agreed Martha. "Or in getting a well one settled for a nap on a hot sticky afternoon.

"Do they add much to your bill?" asked someone.

"They use about as much current as a lamp," Martha answered. "We never notice any difference when we use the fan, the increase is too slight."

Then we all fell to talking at once about the help a fan like that would be in the kitchen during canning season, or when we were cooking for threshers. It would carry out heat and odors, too, if it were set facing the open window. It would make it easier to iron on a muggy Tuesday, and nights when no breeze springs up at sundown, it would cool off stuffy bedrooms, so we could drop off to sleep at once.

There is no question about it. They do not affect recorded temperatures, nor do they appear in wind velocity reports, but so far as human comfort is concerned, they do a lot about the weather.

Fans Bring Comfort Anywhere, says Mrs. Oscar Johnson, Brooklyn, Wis.

A Good Start

We have just made a start in what electricity can do for us. First the lights for comfort and saving our eyesight, motor for cream separating, lights in the barn and electricity for the milking machine (which especially means something for us as we did not care to bother with gas engine and would have been compelled otherwise to give up the cows), electric iron and one plate electric stove. The electric range, washing machine and water system will be added as soon as our means will possibly permit. I wish to thank you for the receipt for *Everlasting Dough*.—MRS. RANE MCMILLAN, MERIDEN, IDAHO.

The "Hired Hand" that never quits!

The Improved Master Portable Farm Motor

.....Simple in Construction.

.....Compact and strong but light enough in weight so that one man can move it easily from place to place.

.....Powerful Master Motor equipped with ball bearings.

.....Has two pulleys—easy to change speeds.

.....Push button control switch with thermal overload and low voltage protection.

.....Steel frame and sturdy wheels to absorb shock and strains easily.

.....For full particulars see your nearest dealer

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STOCKS CARRIED IN PRINCIPAL CITIES
More Than 70 Service Stations
MASTER GUARANTEED MOTORS
1/20 TO 10 H.P. Dayton THE MASTER ELECTRIC CO. Ohio Less than 40°

Necessity is Still the Mother of Invention

By HARRY N. GILBERT

SPURRED on by the necessity of doing a large amount of work with a decreasing number of hands, many farmers have rigged up ingenious ways of making electricity relieve them of a few of their burdens, thus giving them more time for the numerous other duties.

Out near Horicon, Wis., one farmer has his pump and open tank in the barn. Several times while busy with chores he forgot the running pump and flooded the barn. So he made a float of a piece of board. By means of rods and levers attached to the float and the motor switch he makes the pump jack shut down the motor when the tank is full.

Edward and Arthur Berndt own adjoining farms east of Ripon, Wis. They had a hand-operated clipper for their dairy cows. It required two men to operate, but usually when one was ready to clip the other had some other urgent business. So they had two grooved pulleys of the right sizes made for the clipper and the washing machine motor. They mounted the clipper and motor on opposite ends of a plank long enough to reach across the manure carrier bucket. Now one man and electricity clip the cows with ease.

Perhaps when J. H. Nolan of Eldorado, Wi , was a boy he was the victim of some one with an "axe to grind." Anyhow his boys do not have to turn a grindstone to sharpen sickles, axes and other tools. He has mounted a one-fourth horse-power motor on his grindstone frame and drives the stone at the proper speed by sprockets and chain.

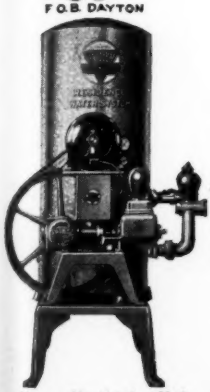
George Harrold near Richmond Center finally got tired of digging ice out of the ice house and washing it for the ice box. He said, "Just when I was busiest in the summer I had to take time for this ice job every few days, and when the box was filled I was as wet as though I had jumped in the river. So I put in an electric refrigerator and my troubles are over."

He has a one-half horse-power air cooled compressor unit in the cellar. This cools a cabinet in the kitchen and a large cabinet located in a near-by building. This large cabinet he uses for cream and fresh meat.

This Big Refrigerator Helps George Harrold Get a Better Price for His Cream.

JUST LIKE CITY WATER SERVICE

COMPLETE WATER SYSTEMS as low as $69.50 F.O.B. DAYTON



Duro Vertitank Unit System for shallow wells.

Just Installed!

Mother is happy—and so is Dad and little Tommy! Who wouldn't be? For just look at the water rushing from the faucet at a turn of mother's hand! What joy and comfort Duro has brought into this home! And at so little cost, too!

Why deny your loved ones this greatest of all farm conveniences—fresh running water under pressure?

It's easy to own a Duro Automatic Water System. You can buy a complete Duro Automatic Water System for a small down payment and then regular easy payments. The nearest Duro dealer or factory representative will be glad to estimate on your needs. Write your name and address on the coupon below and mail it to us for complete information on Duro Water Systems.

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Please send me full information on Duro Water Systems, and free advisory service on my requirements.

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The special cabinet he had made in Richmond Center at a cost of $170. It is approximately 9 feet long 5 feet high and 3 feet deep. The walls are double with 500 pounds of ground cork between and are about 6 inches thick. The entire installation cost him about $795.

"No, sir! I wouldn't go back to ice for anything," he told me. "I used to pay $80 every winter to get my ice house filled and then had all the bother with it in the summer. I am sure the electric refrigeration is cheaper to say nothing of being better and handier. As near as I can figure, it costs me about $3 a month for current, so I am more than satisfied."

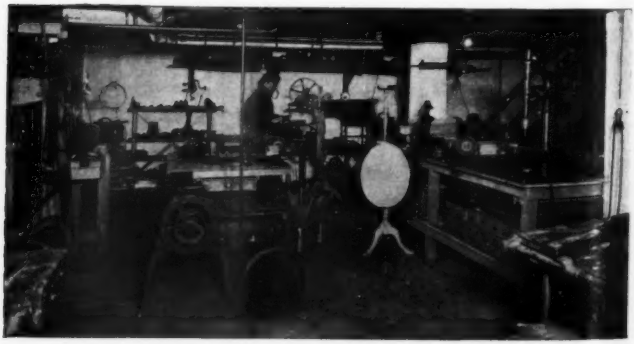
When I was there he had two large cans of cream in one end and a lot of fresh meat in the other end of the special cabinet. He has kept cream perfectly sweet for a week in it. He killed a hog for silo fillers and put it in one end of the box. In January he still had some of that hog chilled in the box, so he has fresh pork any time he wants it.

Fred Bussler, Plainfield, Wis., feeds a considerable number of chickens. He got tired turning the corn sheller by hand so now he fastens the one-fourth horse-power from his cream separator on top of the sheller and makes it do the turning while he feeds in the ears. He has the mounting on the sheller arranged so it only requires a few minutes to take the motor from the separator and mount it on the sheller. In a short time he can shell enough corn to last the chickens a week. If he wants the corn cracked for them, he takes the screen out of his hammer mill and puts the corn through the mill. He has the hammer mill set up in the granary running it with a 5 horse-power electric motor.

Things like these will go far toward keeping young John and Mary on the farm. The question, "Shall I advise my daughter to marry a farmer boy" will not so often be answered in the negative when more farms are electrified.

What They Are Doing in Kentucky

ELECTRICITY is an ideal source of power, an economical servant, and the world's greatest entertainer. It has brought immediately into the home, through the electrically operated radio and talking machine, virtually every form of entertainment which may be heard on the stage or in the great outdoors; music, drama, comedy, religious and educational programs, sports, and politics.

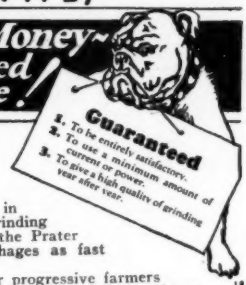


There's Something Doing in the Workshop Most Every Night.

The PRATER MILL
(HAMMER TYPE)

5 H.P. $75

Save Money—Grind Feed at Home!


Guaranteed
1. To be entirely satisfactory.
2. To use a minimum amount of current or power.
3. To give a high quality of grinding year after year.

PRATER FARM MILL, the most popular hired man on the farm today! Always in good health and eager for work. Grinding grains or cracking corn (automatic feed) are the Prater Farm Mill's specialty. And it grinds roughages as fast as you can feed it.

Prater Farm Mill is interested in grinding for progressive farmers who appreciate the value of quality. Clean, sweet grains raised right on your own farm and ground as fine or as coarse as you want them. For power, you can use your portable motor for belt drive, or Prater Farm Mill brings its own General Electric Motor along. Prices for Prater Mill (without motor):

2 Horse Power size.....$48.75 3 Horse Power size.....$54.25
5 Horse Power size.....$75.00

Send for Prater Mill's new Book of Facts. Ask your power company or dealer for a demonstration.

PRATER PULVERIZER CO.
Dept. K-817 West Washington Boulevard, Chicago

THE MODERN FARM HOME HAS RUNNING WATER

And the selection of a pump or water system is of utmost importance, if you are to derive the greatest benefit and help from its installation. Experience has shown that it is poor economy to buy a pump too small for the maximum duties about the premises. Many modern country homes are now equipped with two automatic electric systems—one for soft water under pressure, for bath room and other general use about the home and tenant house—the other for spring or well water for barn, stock and houses.

Also a vital factor in satisfactory trouble-free service and low maintenance cost, is a pump mechanically suitable for the most exacting requirements. The Burks Super Turbine is such a pump. Expert engineers have told us it is mechanically perfect. Has only one moving part—no friction bearing surfaces to wear, cause grief, necessitate replacement and expense—in fact there is no metal to metal contact of moving parts and *therefore no wear*. This wonderful piece of essential farm equipment is durable, reliable and efficient to the extreme.

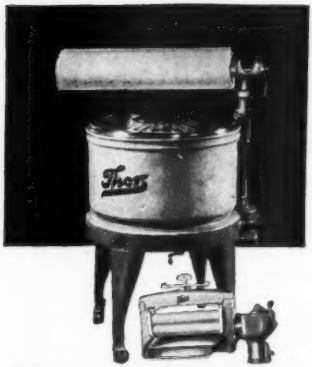
BURKS SUPER-TURBINE PUMPS
Only one moving part
"A Life-Time of SERVICE"

DECATUR PUMP COMPANY
Decatur, Illinois

Please send me descriptive literature on Burks Super Turbine Pumps.

Name .....

Address .....



Equipped with gas engine for homes without electricity

Now

a Washing and Ironing Machine Combined

At a price formerly asked for a washing machine alone

WOMEN on the farms—you can now be rid of the drudgery of both washing and ironing, and pay no more than you have been asked for a good washing machine.

The Hurley Machine Company has just perfected this complete laundry unit—the first and only machine of its kind. It combines the Thor Agitator—world's most thorough and efficient speed-type washer—with the New Thor Rotary Iron, that does your ironing in one-fifth the time required by hand.

The Thor name on this new laundry unit is your assurance of lasting satisfaction. Write us for illustrated booklets describing this and other Thor home laundry equipment.

THE HURLEY MACHINE CO.
22nd Street and 54th Avenue
Dept. E-6 Chicago, Ill.

In many instances, it is also providing a means of carrying on "hobbies" on the part of its consumers and is opening a new channel for the earning of many extra dollars in the home during spare hours.

Mr. T. J. Miles, Louisville, Ky., besides enjoying practically every modern electrical convenience obtainable for his residence, is also using electric service to satisfy his greatest hobby, wood turning. He has a work shop in his basement where he turns out small pieces of household furniture, including end tables, magazine racks, smoking stands, floor and table lamps, and tilt-top tables. Mr. Miles also possesses a Duco spraying apparatus with which he expertly puts the finishing touches on his wood creations and has made many attractive pieces of furniture for his home besides turning out numerous articles as gifts to his friends and relatives. A 1½ horse-power electric motor drives his lathe and several saws.

The kitchen of the home is equipped with an electric range, electric refrigerator, egg cooker, percolator, waffle iron, toaster, corn popper, and an electric wall ventilating fan, which, according to Mrs. Miles, keeps her kitchen devoid of grease and smoke as her living room.

The electric sweeper, washing machine, and flat iron help diminish the drudgery that went with the clumsy, old-fashioned methods of housekeeping.

Electric Lights, Refrigerator, Range and Fan Serve the Miles Kitchen.

The spacious and attractive living room is furnished with an electrically operated radio and automatic record-changing Victrola which bring much entertainment to Mr. and Mrs. Miles.

Mr. Miles states that the average cost of operating all of this equipment is about $10.00 per month, only a fraction of the price of one good servant, and the bill is one which he never regrets having to pay, because the service is constantly at work banishing drudgery and bringing to him and his wife extra time and numerous pleasures.

Another striking example of the wide extent to which the service is being utilized in the home is well illustrated near Morgan, Kentucky, in Pendleton County. Here a customer of the local company, besides outfitting her home with the most modern of fixtures and household appliances, has installed a system of flood lights about her premises, the lights being controlled by a button on her bed in her room. If she is disturbed in the night by intruders, she has merely to press the switch to immediately flood the premises with light. This same customer has also installed an electric water pump in her home to furnish running water and, in general, enjoys all the conveniences of a city resident.

Modern electric service in rural districts puts the residents of those communities in line for the utilization of almost every city convenience, bringing greater production and more profit for the farmer, a more attractive and comfortable homestead for the housewife.

A Great Labor Saver

We have an electric water system, washer, iron, radio and lights in all buildings. Also have a portable motor. Some day we hope to have an electric range and refrigerator. Electricity is one of the greatest labor savers on the farm. W. R. RUSHER, PIERCETON, IND.

With General Electric Motor

Your Washing Done

For the price of two 2-cent stamps

THIS is a message to every farm woman who is making the great sacrifice of health for the sake of a few cents a day.

It isn't worth the price! The day of back-breaking drudgery on the farm has passed.

The originator of the electric washing machine offers you the fastest, most modern washing machine on the market. It does *all* the work. It washes a tubful of clothes sparkling clean in 5 minutes. It has fewer moving parts than any washing machine on the market. No belts to slip and break—nothing to get out of order.

And this is the lowest priced quality washing machine on the market. We will gladly mail you fully illustrated booklets on all Thor products. Write to

THE HURLEY MACHINE CO.
22nd Street and 54th Avenue
Dept. E-6 Chicago, Illinois

How I Make Electricity Serve Me

By MRS. W. H. KENNEY
Camillus, N. Y.

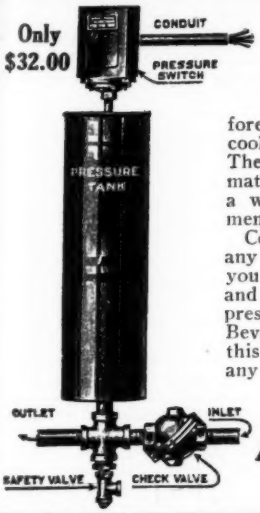
SINCE getting the electric service in July 1926, my husband and I often say that if we were to buy a farm now we wouldn't take it at any price if we could not have the current. As to what it does for us, I am at a loss to know where to begin because it is so much help. In the house I myself am most enthusiastic about my electric washing machine. That might not appeal to some, but to me wash day was a terrible dread up to the last two years, and now it is an actual pleasure.

On Monday, December 31, I did not think much about washing in the morning and then it turned out to be a wonderful day, and at 12:15 I rolled my washer into the kitchen, started the water running to fill the tubs, then picked up the clothes while the tubs were filling, and at 2:30 the clothes were on the line (five tubs full) and the machine was emptied and put away. One day last spring I washed and did the ironing before dinner. After dinner, I went with my husband to a neighboring village, came home and went to the swamp for cow slip greens and was not tired. This is to show how much more can be accomplished now than in the old way.

Some may say, "But we don't have the running water." Anyone can have it with electricity. We have two water systems, one for soft water, both hot and cold, and one for the hard water, which is piped into house and barn. While we are speaking of the water, let's not forget the bathroom, which is made possible by the current. We have the bathroom complete. I don't know of a class of people in the world so much in need of bathrooms as the farmers, and how few have them. Our bathroom adjoins our sleeping room and many times after the hot and dusty days, when the good man is very tired and not a little dirty, after undressing he will look at the tub, turn on the faucets, and hop in. If he had to walk across the fields to a pond or stream or carry water and fill the family wash tub I doubt very much if he would do it, and

Just a Twist of the Wrist and the Heat is On.

AUTOMATIC FRESH WATER SYSTEM



OUR water system is very simple, easy to install and operates merely by the opening and closing of the faucet. No storage tank is necessary, therefore, the water is always fresh and cool, coming direct from the well. The pressure tank is entirely automatic in operation and built in such a way that it requires no replenishment of air. It is patented.

Connect this water system up with any good electric pumping outfit and you will have fresh water, whenever and wherever you want it at city pressure. We would recommend the Bevan Electric Pumper or Unit for this purpose, which can be used on any depth of well.

Write for literature and prices.

Acme Machine Company
2901 Fremont Ave. So.
Minneapolis, Minn.

HAVEN *Farm Milk Cooling* Systems

As originators of immersed type milk cooling with electric refrigerating machinery, we have developed the Haven System to a maximum degree of simplicity and efficiency. Dependable in operation. Simple installation — no pipes to connect or disconnect.

Can be used for dry storage of either bulk or bottled milk, with or without surface coolers. Suitable for a wide range of capacities to take care of all farm and small dairy requirements.

Furnished either for belt drive from shafting or engine, or electric power direct drive. Sold with or without cork insulated steel tank, as desired.

The Haven Machine is made especially for **farm service.** It is **not** a household machine put to the heavy load of milk cooling.

Mail the coupon for complete information.

HAVEN MANUFACTURING CO.
Milwaukee, Wis.

Dealers: A few good sales territories still open

Complete Haven Installation with All-steel Insulated Tank

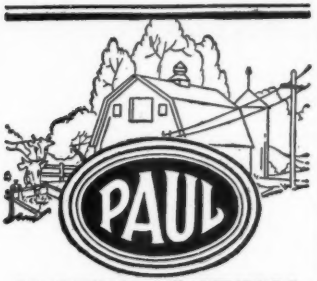
Haven Manufacturing Co.
Milwaukee, Wis.

Without obligation, send complete information about your milk cooling system. I produce ..... gallons of milk per day. Kind of power available .....(engine or electric)

Name .....

Address .....

.....



WATER SYSTEMS
Increase Farm Profits!

A LITTLE Paul electric pump will deliver *more water for a cent than a man can pump and carry in an hour.* Plenty of fresh, clean, cool water for kitchen, dairy and barn! *What a relief from back-breaking labor!* Facts prove, too, that ample water supply greatly increases profits from live stock, dairy and poultry.

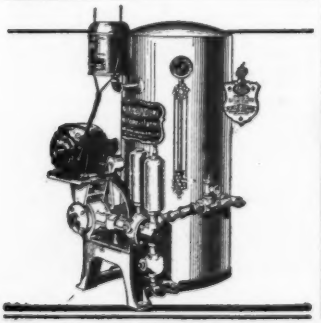
If you do not have an efficient water system, you are not getting the most from farm electricity. Write us today!

FORT WAYNE ENGINEERING & MFG. COMPANY
FORT WAYNE INDIANA
Pumps & Water Systems, Softeners, Heaters

Fort Wayne Engineering & Mfg. Co.,
1722 N. Harrison St. Fort Wayne, Ind.
Send complete information and prices on Paul Water Systems.

*Name*_____

*Address*_____



one feels so refreshed after a hard day's work.

Then there is the vacuum cleaner, flat iron, corn popper, radio and last but not least, the electric range. I never, even in my wildest dreams, thought I could have anything like it. I can put my dinner in the oven at any time I see fit, go to town or to help a sick neighbor, or berrying, or anywhere I want to and forget my dinner and it is all ready to put on the table when the hungry men come in from the fields. And oh, so clean, no smoke or oil or dirt of any kind—just a twist of the wrist and the heat is on, and the best part of all is that we are actually saving money by getting the domestic electric utility rate.

We are planning this summer on having an electric refrigerator, and I know that it will be a wonderful help, too. I could tell a great deal more, but it all must be used to be appreciated.

Insect Control

(*Continued from page* 12)

cated that not more than three or four per cent were distinctly beneficial, thus leaving a balance of at least ninety-six per cent that were either harmful or of almost no economic importance either way.

The overwintering of codling-moth pupa in apple storages was the basis of another series of tests. The pupa are found in cracks and crevices in containers and grading machines, also, in the walls of the room, particularly around window casings.

With the approach of warm weather along about June or July when the temperature within the storage and packing room rises above 60 degrees Fahrenheit, the familiar codling-moths emerge from these cocoons and begin to fly about in search of an escape from the building to go out and lay eggs in the orchard.

At this time, a suitable light and an efficient trap in the room will catch almost all of these pests as fast as they emerge, and before the eggs are developed and laid, thus preventing a great deal of damage.

Results secured by using trap lights as a means of catching insect pests have conclusively demonstrated the fact that they are effective. The detail of their practical use as a means of insect control remains a problem to be worked out in years to come. It will be no small undertaking, but considered in the light of evidence which has been gathered heretofore, is considered by workers in the field to be worth the effort.

Fans for Ventilation

(*Continued from page 20*)

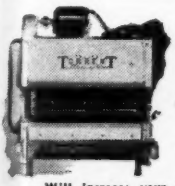
day. The weather was considerably above freezing but the herdsman preferred to do this rather than open the doors and windows and create undesirable drafts and sudden changes in the temperature.

Fans for barn ventilation are very desirable because they can be turned on and give good air movement when it is needed and can be turned off when not needed. This has been one objection to the gravity system because in cold or windy weather it works best when it is needed least of all and does not work as well when the weather is quiet or fairly temperate. The flexibility of the fan system is the outstanding feature.

Trusts Water

Mrs. Jones (interviewing prospective laundress): "You may be glad to know we have an electric washing machine."

Laundress (dejectedly): "Ah nevah washes clothes with anything but watah, ma'am."



Torrent Bunch Vegetable Washer
A Truck Farm Need
Saves Its Cost in a Few Months.

Will increase your profits.
Know more about this great time saver.
Felins Tying Machine Co.
1194-96 Fourteenth Street
Milwaukee Wisconsin

Milk and Separate with Electricity *The* De Laval Way

MILKING and separating the modern De Laval Way are among the most profitable means of utilizing electricity on the farm. The elimination of drudgery and the production of a better product are made possible by two lines of De Laval Milkers and two lines of De Laval Separators, all of which may be efficiently and economically operated by electricity.

THE DE LAVAL SEPARATOR CO.
Dept. 6242
New York, 165 Broadway
Chicago, 600 Jackson Blvd.
San Francisco, 61 Beale St.

Please send me, without obligation, full information on:
(Check Which) ☐ Electrically driven milker ☐ Electrically driven separator

Name .....
Town .....
State .....

ELECTRIC SERVICE PAYS

when a CENTURY Portable Power Unit is used.

Ask your Power Co., or write for Bulletin 14-1000.

CENTURY ELECTRIC CO.
1806 Pine St. St. Louis, Mo.

40 U. S. and Canadian stock points and more than 75 outside thereof.

Century MOTORS

Wonderful New Method

The Surge Milker

Milks Cows Like No Other Machine Ever Milked Cows Before

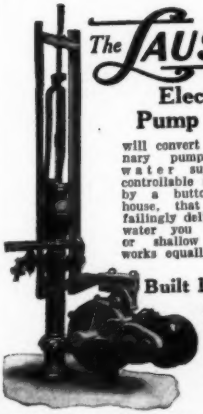
Farmers clear across the continent are talking about the great Surge Milker and its wonderful new milking method. And they all say it is the easiest machine to clean they have ever seen.

Of course, The Surge can be electrically operated! Write today—learn *how little* it costs to equip The Surge for "high-line" current.

Send for the great Surge Catalog telling all about this great milker. Book is FREE. Write for it—NOW.

Pine Tree Milking Machine Co.
2843 W. 19th St., Dept. A-551, Chicago, Ill.

Electrically Operated!



The LAUSON Electric Pump Jack

will convert your ordinary pump into a water supply unit, controllable all weather by a button in the house, that will unfailingly deliver all the water you want—deep or shallow well, it works equally well.

Built Like a High Grade Auto Transmission

Machine cut hardened gears, fully enclosed, running in oil. Bronze bearings. No chains or sprockets. High grade motor. Compare with all others. Write for special literature and prices.

Also complete Water Systems

THE JOHN LAUSON MFG. CO.
700 Michigan St., New Holstein, Wis.

Cover Title Contest

Every member of a farm family getting this little magazine is eligible for these front cover title contests.

Use the form below or if you don't want to tear the magazine, you can make out your own form on a separate sheet of paper, writing on one side only.

In addition to the $25 cash prize for the best title to this month's front cover, we will pay $5 for each of five titles given honorable mention. In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled. The winners will be announced in the August issue.

Here are the rules:

1. **Only farmers or members of the farm family, to whom this magazine was sent, are eligible.**
2. **Only one title may be submitted.**
3. **Use the form below or write your answers on a plain sheet of paper in similar form.**
4. **Be sure to answer question (a).**
5. **Write plainly and send your suggestion to the Title Editor, ELECTRICITY ON THE FARM, 225 West 34th St., New York, before July 1.**

THE APRIL WINNER

"Watts getting Jimmie in hot water,"
Mrs. Robert E. B. Fielder, R. 2, Arlington, Tex.

And the following titles have been selected as the winners of the five $5 cash prizes:

"Electric plumbing is mother's delight, No trouble with Billy on Saturday night," Mrs. R. W. Curren, R. D. 1, Elmira, N. Y.

"Making 'light' of a 'dirty job' with electricity," Mrs. Elliot Fatum, R. D. 3, Saugerties, N. Y.

"The same old ear wash but with current method," Edward Imwald, Parkton, Md.

"This age old task is a 'necessity,' Made pleasanter now by 'electricity'," Ethel B. Copeland, Box c, Eagle, N. Y.

"There's no more dread of the daily scrub, Since we have electricity and a big bath tub," Mrs. James C. Allan, Cloverdale Farm, Beverly, W. Va.

My Title for June Front Cover picture is.....

.....

.....

.....

.....

.....

(a) How many cows? (Fill in blank in space below)

On our farm, there are.....cows.

Name .....

Address .....

On Monday Morning

By MRS. ALEX. DECKER
Montgomery, Pa.

THE best way I can tell you what electricity is doing for me is to draw two pictures for you. The first one is of myself several years ago before this new unseen force called "Electricity" came into my life.

Monday morning—the alarm clock calls me from that pleasant unreality of sleep into the slow consciousness of a new day and its duties awaiting me. Oh yes! This is Monday. Wash day—that is why the alarm clock was set for four instead of five A. M. In the darkness of the room I grope about for lamp and matches, hitting my sore foot on a chair rocker, bumping my head on a door left ajar.

At last after a hurried breakfast, poorly cooked because of the slow wood fire, I am free to descend into the cellar and pull heavy benches and wash tubs into place.

I haven't realized how cold the morning is until my fingers freeze to the pump handle as I pump bucketful after bucketful of water to carry into the tubs.

The hours drag on and on until finally the last piece of clothing is hung on the line—little guessing how nearly it came to being left for next week because of the frightful pains in my back from rubbing over the old washboard so long.

After supper the evening is short and cheerless. The lights are too poor for reading and I am too tired to talk. But it doesn't matter for I must arise early the next morning to get the fire started and flat irons heated, for I have a long, hard day's ironing ahead of me.

And so ends typical "wash Monday" for the farmer's wife of yesterday.

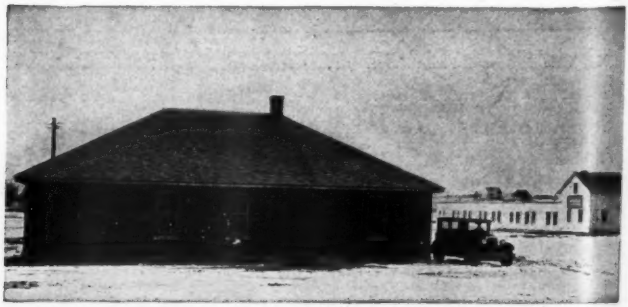
But today it is quite different. This morning I had no need of an alarm clock. I had enjoyed my full eight hours of rest and awakened to the new day with a sense of work to be done and sufficient energy to accomplish it easily.

The breakfast was cooked in a very few minutes on my new electric range and was heartily praised by all members of the family. This gave me great satisfaction and I carried my basket of clothes into the cellar and sorted them for the washing machine.

It was but a few minutes until the electric pump had drawn an ample supply of water to fill the washer, and the little machine hummed cheerily away.

In an hour or so my clothes were all on the line, clean and white, and I could begin to take in the

(*Continued on page* 42)



This is the Karow Hatchery at DeForest, Wisc.

Contrary to caption under the illustration appearing on page 11 of our April issue, this picture shows the hatchery owned and operated by Mr. Arthur Karow. Editorial mistakes will occur, despite the greatest care, but we can always correct them.—EDITOR.

PETERSIME

New

CHALLENGER *Models*

Developed for you who want the Petersime Electric Incubator's higher hatching averages in bottom-tray styles. Last word in time-saving simplicity at new, low prices. Full details of these new Petersime models may be worth thousands of dollars to you. Send for new Petersime Year Book, the "Challenger," at once. It's free. Write for it NOW!

WELLINGTON J. SMITH CO., 936 Davis-Farley Bldg., Cleveland, Ohio

40 Years' Experience

The fact that **GILLETTE CLIPPING** and **GROOMING MACHINES** have been manufactured for the past 40 years should be sufficient recommendation for every progressive farmer to invest in one immediately. They operate on the light circuit furnished by any Electric Light & Power Co., or any make of Farm Lighting Plant.

Dealers—Send for attractive price list.

Gillette Clipping Machine Co., Inc.
129 W. 31st St., Dept. 11, N. Y. City

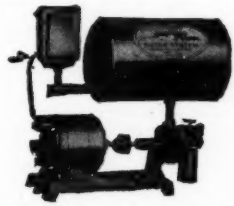
Electric Farm Alarm

FOUR purpose alarm, warns you in case of burglary, fire, failure of highline current or change in brooder temperature. Protects one or all buildings.

Uses dry cells or highline current. Closed circuit principle—rings if wires are cut, shorted or tampered with. Cannot be beaten in any known way. No buried wires—simple to install and economical to operate.

Sold under money-back guarantee

SAFEGUARD ALARM CO., INC.
Council Bluffs, Iowa



ONLY $58

for the completely automatic water system shown here. Ideal for shallow wells and cisterns where water is within 22 ft. of the surface. Only two moving parts.

Many other sizes and styles of water systems, also septic tanks, water softeners, stock drinking cups, etc. Write for complete descriptive literature.

MILWAUKEE AIR POWER PUMP COMPANY
6 Keefe Ave., Milwaukee, Wis.

Make Ice Cream at Home with Freez-E-Z

This electric freezer is simple and inexpensive. It operates on the center post of any modern washing machine. Also a churn and a dishwasher.

If your washing machine dealer can't supply you, write us, giving name of your washing machine.

COLE MANUFACTURING CO.
BIRMINGHAM, ALA.

OAKES ELECTRIC BROODERS

Raise Healthy Chicks This Sure, Easy Way

Here's the latest. It's economical, automatic, fumeless, safe and sure.

Four Sizes—100 to 650 Chicks

Cat. No.	Size	Chick Capac.	Wt.	Each
G-90	22-in.	100 Chicks	15 lbs.	$10.50
G-91	32-in.	250 "	35 lbs.	16.00
G-92	42-in.	425 "	70 lbs.	20.00
G-920	52-in.	650 "	100 lbs.	24.00

Sold by electric appliance and poultry supply dealers or public utility companies. Write us for literature.

Oakes Mfg. Co., 77 D. St., Tipton, Ind.

What Our Readers Say

Lights First

I like the lights in the house first of all; then the washer and third a refrigerator. I also want a brooder for my baby chicks as I think the heat would stay more even and wouldn't be so much trouble as the oil heaters.

Mrs. Fred Warren,
Jefferson, Wis.

• • •

An Experienced User

I have had electrical equipment for several years and the upkeep is very small, my advice to any farmer is to get busy and co-operate with the power company and have electricity. I think you have a wonderful magazine; I enjoy it very much.

Mr. A. F. Alsobrook,
Five Points, Ala.

• • •

Not Expensive

I want to tell you how we enjoy your monthly magazine on our farm. We have electricity and could not do without it. We do not find it expensive and how it brightens up a farm home.

Mrs. Fred A. Smith,
Howell, Mich.

• • •

Earns Its Keep

My husband and I live on a farm where we operate a hatchery and raise quite a number of chickens. Our mammoth incubators are run by electricity, our surplus chicks are cared for in electric storage brooders, and some of our colony houses are electrically heated. We find our vacuum cleaner a great aid in cleaning the incubators after each hatch, besides making the keeping of the house much quicker and easier. We also find it very convenient and profitable to have our laying houses and brooder houses wired in order that we can turn on the lights whenever we need them and to lengthen the day for hens to feed and work, which is very essential to high egg production. We are looking forward to the time when we can install an electric pump so as to have running water in all of our poultry houses, barns and dwelling, also to the installation of an electric feed grinder and mixer, thus enabling us to grind and mix all of our own feeds.

Mrs. L. C. Ellison,
Blocker, Ind.

• • •

Range Appreciated

We have had the use of electricity less than a year in our home and we would not be without it for twice the cost. It is the most economical and labor-saving factor on our farm. I am the proud possessor of a fine four-burner electric range with two ovens and use nothing else for all the cooking and canning on our farm, which is an eight-acre one in the heart of Boise Valley. I also use electricity for washing and ironing and have an electric refrigerator which is a splendid thing on a farm. It is very economical and will soon save the cost in food besides being so convenient. I use a small electric heater to heat my kitchen. I expect to have even more conveniences as soon as we can afford them. My husband makes good use of it also in his work. Yours for "ELECTRICITY ON THE FARM."

Mrs. Geo. W. English, R.R. 2,
Wilder, Idaho.

On Monday Morning

(*Continued from page* 40)

first ones that were dry and iron them.

Ironing too has become almost ridiculously easy. To be able to sit on a stool and not continually run to change this iron for a hot one—to have constant heat and plenty of weight at one's finger tips—well the result is easily seen.

So tonight I have time to read. I feel like reading by the clear, bright light of my new electric reading lamp. The radio is playing a dreamy lullaby and my mind slips back to the days of long ago when my babies played around me. I sigh with content as I snap off the light and settle back among the cushions to listen and dream.